

Sediment Analysis Plan (SAP)

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Australia's marine environment is central to our wellbeing, economy, and coastal lifestyle. When ports or waterways need dredging, the Australian Government requires a careful, science based process to make sure any dredged sediment is safe to place at sea.

The National Assessment Guidelines for Dredging (NAGD 2009) (Commonwealth of Australia, 2009) detail this process.

What Does a Sediment Analysis Plan Help Determine?

The Sediment Analysis Plan (SAP) is a critical tool for transparent, evidence based decision making for dredging projects that helps to determine:

- whether the sediment is clean or contaminated;
- whether it is suitable for ocean disposal;
- if any additional management is required; and
- how water quality or marine habitats may be affected during dredging.

In general a SAP is completed every 5 years in line with the NAGD 2009.

In addition to 5 yearly SAPs, The Port also conducts routine marine sediment monitoring to ensure there is no change from what has been submitted and assessed by the regulator.

The NAGD 2009 process ensures dredging is carried out responsibly. It provides:

- transparency – clear steps and scientific testing;
- environmental protection – only material suitable can be placed at sea;
- accountability – ongoing monitoring and reporting; and
- confidence – decisions are based on national standards and international obligations.

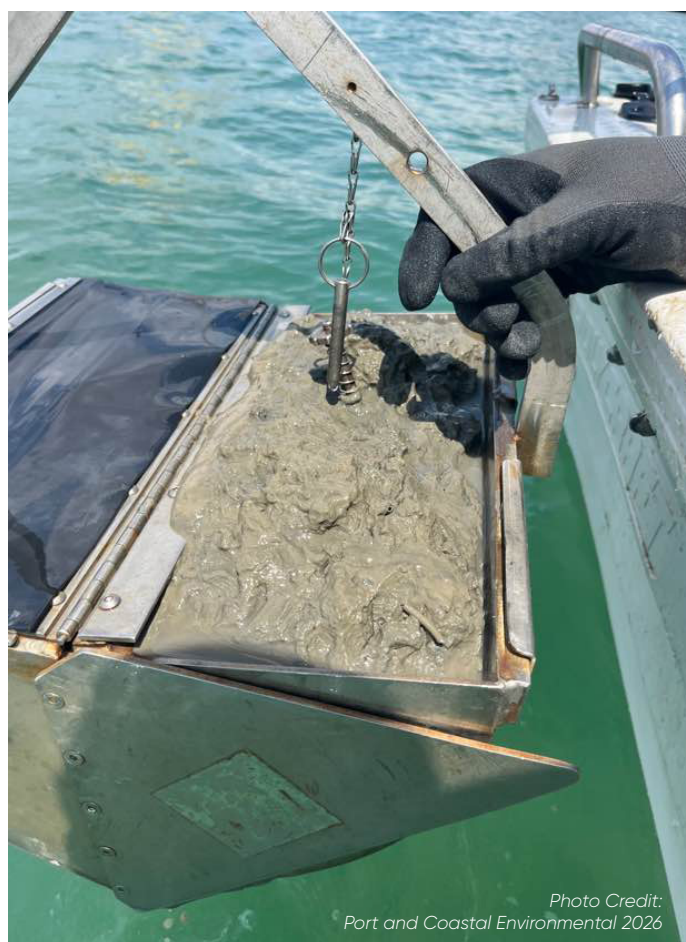


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Collection of sediment using grab



Sampl equipment, preparation and collection.
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What is a Sediment Analysis Plan:

- Outlines how marine sediment will be sampled, tested, and assessed for potential contamination.
- Ensures marine sediment is properly characterised, tested, and assessed so regulators can determine whether it is suitable for ocean placement.
- Ensures marine sediment is safe for unconfined ocean placement and that environmental risks are fully understood before a sea dumping permit is considered.

The SAP is submitted to and approved by the relevant regulator prior to field work being completed.

SEDIMENT ANALYSIS PLAN IMPLEMENTATION:

Collecting Sediment Samples

Scientists collect sediment samples from locations identified in the approved SAP using specialist equipment. Samples are carefully collected, labelled and recoded to ensure they accurately represent conditions at each location.

Samples can be collected by different methods these are specified and agreed in the approved SAP such as Grab samplers (for surface layers) or Core samplers (for deeper layers)

Field results are logged:

- location (GPS);
- water conditions;
- sediment colour, smell, and texture; and
- any visible signs of pollution (paint flecks, Hydrocarbon odour, mottling of sediment etc.).

Samples are stored and transported to accredited laboratories for analysis.

Samples are kept cool and sealed to prevent chemical changes. NADG 2009 outlines:

- temperature requirements;
- time limits before analysis; and
- safe handling procedures.

Proper storage ensures the sample in the lab is the same as the one collected in the field.

Laboratory Testing

Samples are analysed by accredited laboratories to understand the sediments physical and chemical properties.

Testing may include:

- sediment composition (sand, silt and clay);
- metals and other naturally occurring substances;
- organic content; and
- acidity and potential acid sulphate soil indicators.

The results are then assessed against national guidelines to determine whether the material is suitable for sea placement.



Sample collection using vibrocore sampler.



Sample collection and preparation

Sediment Analysis Plan Implementation Report (SAP IR):

The result of the sampling and testing program are compiled into a Sediment Analysis Plan Implementation Report (IR). This report is submitted to regulators and forms part of the evidence used to assess whether dredged material is suitable for sea placement.

Across all phases, the SAP ensures sampling is representative, testing is scientifically robust, and environmental protection is prioritised.

This process helps keep Australia's marine environment healthy while supporting the essential operations of ports and coastal infrastructure.

Together, these measures help ensure maintenance dredging can be undertaken safely while protecting the values of Cleveland Bay and the broader marine environment.



Laboratory samples.



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